Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

General Practice

DO PETS PROTECT THEIR OWNERS IN THE COVID-19 ERA?

Background

The outbreak of COVID-19 – the global spread of the disease caused by SARS-CoV2 – took place at the end of 2019 in Wuhan, China. After the infection of more than 120,000 people and the death of almost 5,000, the World Health Organization announced it as a *global controllable pandemic*. In April of 2020, the number of cases exceeded 2 million and the infection was spread over more than 180 countries. Human coronaviruses (HCoVs) were the origin of not only the current pandemic, but also of the SARS and MERS epidemics, which infected and took the lives of thousands of people. Virologic and genetic studies confirmed that bats have been transmission hosts for both of the viruses, which were further spread by civets and dromedaries. The infection is not exclusive to wild animals, and there are many known strains that affect livestock and pets. Symptoms caused by coronaviruses depend on the type of strain; they may include gastrointestinal ailments, respiratory ailments, and others. The animal origin of the novel coronavirus led to a discussion about the possible transmission of the disease by contact with pets. The World Health Organization faced those concerns, stating the lack of evidence on the spreading of the novel coronavirus from pet animals to people.

Objectives

The correlation between pet-ownership and the presence of a mild course of COVID-19 has not been found yet. They attempted to establish a possible explanation to this observation.

Procedure

The authors conducted a literature review to attempt to answer the objective.

Results

Data show that the occurrence of canine respiratory coronavirus (CrCoV) is high in dogs, which might suggest that humans who possess a pet can have more frequent contact with different types of canine coronaviruses. Since the infected pets may not have symptoms, the contact of owners with pathogens can be unnoticed. Analysis showed that the resemblance of the whole sequence between SARS-CoV-2 and CrCoV is 36.39%. Further investigation of the epitope sequence shows high homology. Cross-reactivity with T-cells can induce the immunological response. The recurrent contact with pathogens may work as immune-mobilization against SARS-CoV-2 in many different paths.

Author Conclusions

1. Canine respiratory coronaviruses occur often among dogs.
2. Ownership of a pet can lead to the contact with dogs' coronaviruses.
3. Re-occurring contact with dogs' coronaviruses might stimulate the human immunological system, and provide an effective response to SARS-COV-2.
4. There is a need for further investigation on the correlation between pet ownership and the course of COVID-19.

Inclusions

One table, 35 references.

Editor Annotation

In this article, the authors attempt to show that having a dog or dogs in the household could lead to protection against COVID-19 or SARS-CoV-2 infection. This is an interesting theory and nice to read about after all of the initial fear that animals, including pet dogs and cats, may be transmitters of the virus. The only positive effects discussed in the literature so far about pets and the current pandemic seem to be emotional benefits of the company of dogs and cats. Though this should not be underestimated, reading about possible physical benefits was refreshing.

The article is in large part a literature review covering the incidence of dog-specific coronaviruses in dogs, showing that it is indeed common. Canine coronaviruses can be passed from dogs to humans through respiratory transmission, though humans are not known to be susceptible to the diseases caused by canine-specific coronaviruses. The theory of the paper that contact with these coronaviruses (of animals, but for the purposes of this paper, specifically of dogs) can lead to protection against SARS-CoV-2 infection in humans was discussed but not advanced as solidly as I had hoped. The authors did a good job raising the possibility of protection of humans from SARS-CoV-2 by exposure to canine coronaviruses but did not follow through on showing that it was likely or definitively true. However, perhaps in a preliminary study on the idea, this is acceptable. Hopefully this is true, and more work will be done in the area to show a link. I agree with the authors that even studies that show a connection after the worst of the pandemic has passed will be valuable as a base for many future studies that deal with the important topic of viruses and their impact on and connectivity between humans and animals. (SF)

Jurgiel J, Filipiak KJ, Szarpak L, et al. Do pets protect their owners in the COVID-19 era? Medical Hypothesis. 2020;142:109831. https://www.sciencedirect.com/science/article/pii/S0306987720309324